

IN THE CLAIMS

1 (Currently Amended). A method comprising:

focusing an imaging device over at least two different focal lengths; and
capturing images of objects at said at least forming an in-focus image including
objects at two different focal lengths;

evaluating the sharpness of portions of said images taken at said two different
focal lengths on a pixel-by-pixel basis; and

forming a composite image to include in focus objects at said at least two
different focal lengths.

2 (Original). The method of claim 1 including automatically focusing an imaging device to at least two different focal lengths.

3 (Original). The method of claim 1 including enabling the user to manually adjust the imaging device to at least two different focal lengths.

Claims 4 and 5 (Canceled).

6 (Currently Amended). The method of claim 1 – 5 including evaluating sharpness on a pixel-by-pixel basis and storing sharpness information in an alpha channel associated with each pixel, said alpha channel storing no color information.

7 (Original). The method of claim 4 including comparing the sharpness values of two captured frames and weighting pixels having sharpness values indicating better focus more than pixels having sharpness values indicating poorer focus.

8 (Original). The method of claim 7 including generating a composite image containing image portions taken over at least two different focal lengths by comparing the quality of focus of two different image portions and weighting the image portion with better focus.

9 (Original). The method of claim 1 including transforming a subsequent frame to match the characteristics of a previous frame taken at a different focal length.

10 (Original). The method of claim 9 including transforming the size of one of two frames taken at different focal lengths.

11 (Currently Amended). An article comprising a medium storing instructions that, if executed, enable a processor-based system to:

focus an imaging device over at least two different focal lengths; and
~~form an in-focus image to include objects at capture images at said at least two different focal lengths;~~

evaluate the sharpness of portions of said images taken at said two focal lengths on a pixel-by-pixel basis; and

form an image to include in-focus objects at said two different focal lengths.

12 (Original). The article of claim 11 further storing instructions that enable a processor-based system to automatically focus an imaging device to at least two different focal lengths.

13 (Original). The article of claim 11 further storing instructions that enable a processor-based system to enable the user to manually adjust the imaging device to at least two different focal lengths.

Claims 14 and 15 (Canceled).

16 (Currently Amended). The article of claim 11 ~~15~~ further storing instructions that enable a processor-based system to evaluate sharpness on a pixel-by-pixel basis and store sharpness information in an alpha channel associated with each pixel, said alpha channel storing no color information.

17 (Original). The article of claim 14 further storing instructions that enable a processor-based system to compare the sharpness values of two captured frames and weight pixels having sharpness values indicating better focus more than pixels that have sharpness values indicating poorer focus.

18 (Original). The article of claim 17 further storing instructions that enable a processor-based system to generate a composite image containing image portions taken over at least two different focal lengths by comparing the quality of focus of two different image portions and weighting the image portion with better focus.

19 (Original). The article of claim 11 further storing instructions that enable a processor-based system to transform a subsequent frame to match the characteristics of a previous frame taken at a different focal length.

20 (Original). The article of claim 19 further storing instructions that enable a processor-based system to transform the size of one of two frames taken at different focal lengths.

21 (Currently Amended). A system comprising:

an imaging device; and

a controller to focus the imaging device over at least two different focal lengths,
capture images of objects at each of said focal lengths, evaluate sharpness of portions of images
taken and form an in-focus image including objects at two different focal lengths on a pixel-by-
pixel basis and form an image including in focus objects at said two different focal lengths.

22 (Original). The system of claim 21 wherein said controller automatically focuses the imaging device to at least two different focal lengths.

23 (Original). The system of claim 21 wherein said controller accepts manual focal adjustments to the imaging device to at least two different focal lengths.

Claims 24 and 25 (Canceled).

26 (Currently Amended). The system of claim 21 25 wherein said controller to evaluate evaluates sharpness on a pixel-by-pixel basis and store stores sharpness information in the alpha channel associated with each pixel, said alpha channel storing no color information.

27 (Original). The system of claim 24 wherein said controller compares sharpness values of two captured frames and weights pixels having sharpness values indicating better focus more than pixels that have sharpness values indicating poorer focus.

28 (Original). The system of claim 27 wherein said controller generates a composite image containing image portions taken over at least two different focal lengths by comparing the quality of focus of two different image portions and weighting the image portion with better focus.

29 (Original). The system of claim 21 wherein said controller transforms a subsequent frame to match the characteristics of a previous frame taken at a different focal length.

30 (Original). The system of claim 29 wherein said controller transforms the size of one of two frames taken at different focal lengths.